

Fisheries Research Summary

Division of Inland Fisheries

N.C. Wildlife Resources Commission



Lookout Shoals Lake Largemouth Bass Assessment

Lookout Shoals Lake is a 1270-acre impoundment on the Catawba River near Statesville, operated by Duke Energy Corporation for hydropower production. Lookout Shoals Lake supports fisheries for largemouth bass, crappie, sunfish and several species of catfishes. The lake also contains striped bass, which are stocked annually by the N.C. Wildlife Resources Commission.



The largemouth bass fishery in Lookout Shoals Lake is governed by a minimum size limit of 14 inches with a creel limit of five fish per day, with two fish allowed below 14 inches. Periodic sampling of largemouth bass populations is needed to determine if current size and creel regulations are adequately protecting the fisheries. The objective of this study was to obtain stock assessment data needed to evaluate and manage largemouth bass in Lookout Shoals Lake.

Largemouth bass were sampled annually from 2008–2010 during late April by Commission biologists using shoreline electrofishing. Ten fixed sites, each approximately 1000 feet in length, were surveyed each year. All largemouth bass collected were measured for length and weight. To determine fish longevity and growth rates, a subsample of fish were sacrificed for age determination using sagittal otoliths (ear bones). The remaining fish were returned to the lake.

The catch rate or catch-per-unit-effort (CPUE) of largemouth bass in this study was the number of fish collected per hour spent electrofishing. The CPUE of largemouth bass declined each year from 86 to 61 fish/hour. However, sample sizes were within the range of those obtained in previous surveys at Lookout Shoals Lake, as well as other Catawba River impoundments. Similar declines have been noted on other impoundments, only to see improvements the following year. Future surveys will help determine if the declines observed from 2008–2010 continue, or if they are just a result of natural variation in the population. The sizes of largemouth bass captured during the three years ranged from 2 to 20 inches, and the average size collected was 13 inches (Figure 1).

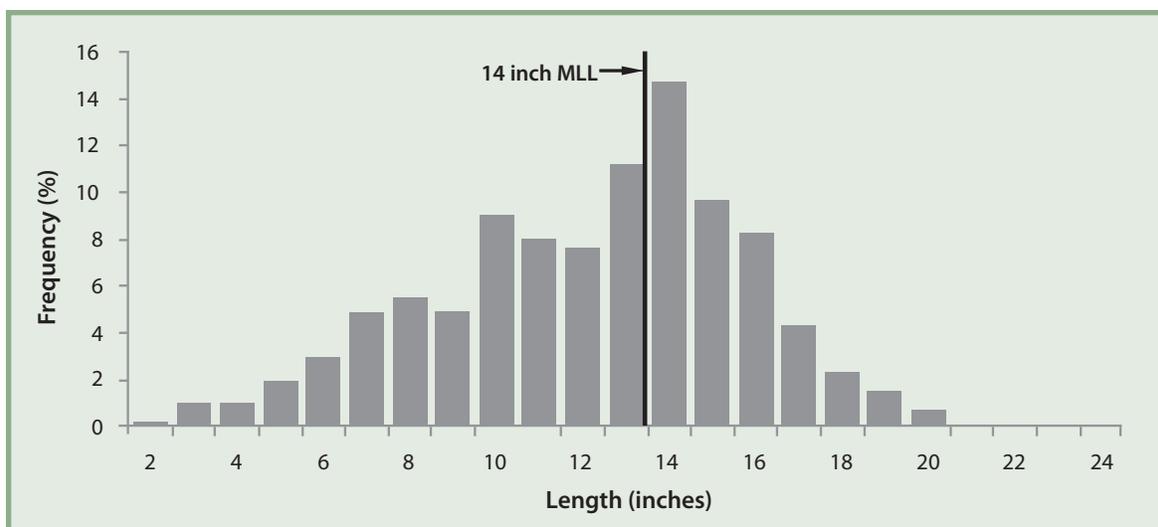


Figure 1. Length distribution of largemouth bass collected at Lookout Shoals Lake, 2008–2010. The solid line displays the 14-inch minimum length limit (MLL).



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Mean relative weight values, a measure of condition, were good for all sizes of largemouth bass. The mean relative weight values for each year ranged from 91 to 102, with an average of 97 during the three years of the study. These values indicate that largemouth bass in Lookout Shoals Lake are in good health and that there is a sufficient amount of forage in the lake to support them.

Largemouth bass collected during this survey ranged in age from 1 to 12, with the exception of one fish older than age 12 (age 18) collected in 2010. The majority (73%) of fish collected were < age 6.

Knowing the length and age of a fish allows the biologist to determine of growth rates and assess the current size regulation for effectiveness. Growth rates of largemouth bass at Lookout Shoals Lake appear to be similar to those reported for other Catawba River impoundments, with largemouth bass reaching 14 inches by age 4 (Figure 2).

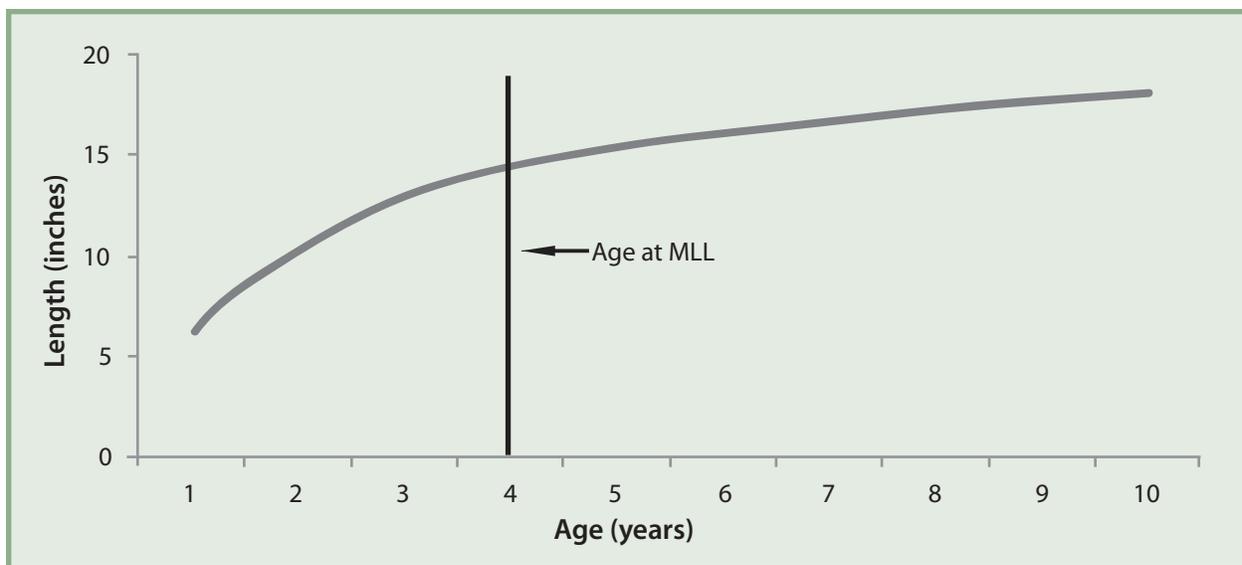


Figure 2. Growth curve for largemouth bass at Lookout Shoals Lake, 2008–2010. The black line represents the age largemouth bass reach the 14-inch minimum length limit (MLL).

The Lookout Shoals Lake largemouth bass population appears to be doing well, with similar abundance, growth rates, and relative weights compared to nearby Catawba River impoundments. Future surveys will help monitor the decline in catch rates that were observed between the three years of this survey. Additional surveys will also assist with monitoring possible introductions of spotted bass, which have recently shown up in nearby impoundments (Lake Norman and Lake Hickory).

Spotted bass, as with any introduced fish, have the potential to compete with existing fish populations such as largemouth bass. While it is hard to predict the impact of fish introductions on resident fish populations, they can often result in reduced abundance and growth rates of popular fish species. Furthermore, it is usually impossible to remove introduced species once they have become established. As a result, it is illegal to stock fish into public waters without a permit from the N.C. Wildlife Resources Commission.



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There are currently two public boat ramps that are operated by the Commission on Lookout Shoals Lake (see map below). More information on these ramps can be obtained from the Commission website (www.ncwildlife.org). There is also a canoe/kayak access and angler trail at Riverbend Park, managed by Catawba County Parks, located upstream of Lookout Shoals Lake on the Catawba River.

Map of Lookout Shoals Lake

